

PATENT SPECIFICATION

667,390



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COMPLETE SPECIFICATION

Improvements in A.C. Generators

1. PERCY ROBINSON, a British Subject, of 23, York Place, Harrogate, Yorkshire, formerly of 31, Ripon Road, Harrogate, Yorkshire, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to A.C. generators and has for its object to provide an improved generator which is of robust construction, is economical to manufacture and eliminates rotor conductor distortion by obviating the use of a slotted rotor or stator for embedding the conductors.

The invention consists in an A.C. generator in which wound laminated 20 rotor cores or permanent magnets extend parallel with the rotor axis and have pole pieces at their ends, the stator cores being similar to the wound laminated rotor cores when such are employed, each stator 25 core having pole pieces at its ends, the rotor cores or permanent magnets and pole pieces being secured in the rotor frame and the stator cores and pole pieces being secured in the stator frame, both 30 the laminated rotor cores when such are wound with insulated conductors on plain insulated bobbins which fit on the cores, and in which the pole pieces are 35 bolted to the rotor and stator frames respectively, and are laminated with the laminations at right angles to the associated cores or permanent magnets.

Referring to the accompanying 40 planetary drawings:—

Figure 1 is an axial section through an A.C. generator constructed in accordance with this invention.

Figure 2 is a cross section on the line 45 2—2 of Figure 1.

Figure 3 is a cross section on the line 3—3 of Figure 1.

[Price 2/8]

The rotor cores *a* are built up of strip laminations parallel with the rotor shaft *b*, so that the rotor core flux is parallel with the shaft, and the pole pieces *c*, which are also strip laminations, are situated at each end of each core *a*, the pole piece laminations being at right angles to the core. The pole pieces are bolted to rotor frames *d* and may also be held in position by an encircling band or bands (not shown). The rotor coils *e* are wound with suitable insulated conductors on plain insulated bobbins *f* with holes 60 therethrough to suit the cores *a* on which they are placed. For small machines, the rotor can be fitted with permanent magnets having laminated pole pieces.

The stator cores *g* are similar to the wound rotor cores, extending parallel with the rotor axis and composed of plain strip laminations with a wound insulated bobbin *h* on each core and with pole pieces at the ends of each core at right angles 70 to the core. The stator pole pieces *i* come adjacent to the rotor pole pieces, being separated therefrom by the usual air gap. The stator cores *g* and pole pieces *i* are mounted and secured in the stator frames *j*, in which the rotor shaft is journaled. Brackets *k* may hold the cores *g* in place.

With my improved constructions, the replacement of windings, when necessary, is facilitated. There is no overlapping of the end windings as in present constructions and there are no expensive end-winding clampings. Further my construction provides better facilities for insulating conductors for high voltages and makes better use of the copper in the windings.

What I claim is:—

1. An A.C. generator in which wound laminated rotor cores or permanent magnets extend parallel with the rotor axis and have pole pieces at their ends, the stator cores being similar to the wound laminated rotor cores when such are em- 80 85 88 90

ployed, each stator core having pole pieces at its ends, the rotor cores or permanent magnets and pole pieces being secured in the rotor frame and the stator cores and pole pieces being secured in the stator frame, both the laminated rotor cores when such are employed and the laminated stator cores being wound with insulated conductors on plain insulated 10 bobbins which fit on the cores, and in

which the pole pieces are bolted to the rotor and stator frames respectively, and are laminated with the laminations at right angles to the associated cores or permanent magnets.

2. The improved A.C. generator, substantially as described and as illustrated in the accompanying drawings.

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MARKS & CLERK.

PROVISIONAL SPECIFICATION

Improvements in A.C. Generators

I, PERCY ROBINSON, a British Subject, 20 of 31, Ripon Road, Harrogate, Yorkshire, do hereby declare the nature of this invention to be as follows:—

This invention relates to A.C. generators and has for its object to provide an 25 improved generator which is of robust construction, is economical to manufacture and eliminates rotor conductor distortion by obviating the use of a slotted rotor or stator for embedding the 30 conductors.

In accordance with my invention, the 35 rotor cores are built up of strip laminations parallel with the rotor shaft, so that the rotor core flux is parallel with the shaft, and the pole pieces, which are also strip laminations, are situated at each end of each core, the pole piece laminations being at right angles to the core. The pole pieces are bolted to a rotor frame 40 and also held in position by an encircling band or bands. The rotor coils are wound with suitable insulated conductors on plain insulated bobbins with holes therethrough to suit the cores on which they 45 are placed. For small machines, the rotor

can be fitted with permanent magnets having laminated pole pieces.

The stator cores are similar to the wound rotor cores, extending parallel with the rotor axis and composed of plain 50 strip laminations with a wound insulated bobbin on each core and with pole pieces at the ends of each core at right angles to the core. The stator pole pieces come adjacent to the rotor pole pieces, being 55 separated therefrom by the usual air gap. The stator cores and pole pieces are mounted and secured in the stator frame, in which the rotor shaft is journalled.

With my improved construction, the 60 replacement of windings, when necessary, is facilitated. There is no overlapping of the end windings as in present constructions and there are no expensive end-winding clamps. Further my construction provides better facilities for insulating conductors for high voltages and makes better use of the copper in the 65 windings.

Dated this 7th day of April, 1949.

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This Drawing is a reproduction of the Original on a reduced scale

